

# Agreement in Natural Language

APPROACHES, THEORIES, DESCRIPTIONS

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## Preface

THIS BOOK GREW out of a conference on Agreement in Natural Language, held at Stanford in October 1984, and sponsored by the Department of Linguistics and the Center for the Study of Language and Information (CSLI) at Stanford University.

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## 2 Agreement: A Partial Specification Based on Slavonic Data

GREVILLE G. CORBETT

THIS PAPER IS an attempt to specify what is required of that portion of linguistic theory which is concerned with agreement. The data are taken from Slavonic languages, which are a somewhat conservative group within Indo-European. Even within this limited area, there are ample difficulties; naturally, a linguistic theory must meet these and many more from beyond Slavonic for it to be considered an adequate account of agreement. The justification for a paper of this type is that theorists, after long treating agreement merely as a diagnostic (with notable exceptions such as Morgan 1972), are now increasingly viewing it as an important problem in its own right. This new approach is shared by linguists of different persuasions. There is now the danger that old problems will be 'rediscovered' and time wasted going over old ground. Therefore the range of problematic agreement data from Slavonic is set out in a form which will be accessible to other investigators, so that at least the groundwork need not be repeated. In order to make the survey of wider use, I have tried, as far as is possible, to keep it neutral relative to different theories. Of course, data which cause severe

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Versions of this paper were read at the Conference on Agreement, Department of Linguistics and Center for the Study of Language and Information, Stanford University, and in the Department of Linguistics, University of Southern California, in October 1984. I am grateful to all those who made comments, especially to Professor Bernard Comrie. I also wish to thank the British Academy for a grant enabling me to attend the conference.

difficulties in one theoretical framework may be completely straightforward in another, and so some sections are likely to be of greater interest than others to individual readers.

## 1 Basic Requirements

At the very least, a linguistic theory should allow us to incorporate the equivalent of traditional statements such as: *in Polish, attributive adjectives agree with their head nouns in number*; or, more generally, *in a given language, X agrees with Y in Z*. The definition of *agrees with* is problematic, but need not detain us since it is intimately bound up with the particular theory adopted. We shall use agreement in the traditional sense, to refer to the matching of properties between elements in specified syntactic configurations. Whether there is any directionality involved and, if so, the way it goes, depends on the theory and so will be left open. We shall follow normal usage, whereby adjectives are said to agree with nouns, predicates with subjects, without implying more than a matching of properties.

When we state that: *X agrees with Y*, we specify the *domain* of agreement. We shall refer to the *X* element (the attributive adjective, for example) as the *target* and the *Y* element (the head noun) as the *controller*. This usage mirrors the relationship implied by *agrees with* but nothing crucial depends on the terms adopted. While any theory must be able to specify the domains of agreement, if it can predict them (as, for example, in Keenan 1974), this is clearly a considerable advantage. In addition to specifying the domain, we must indicate the agreement properties involved (*agreement in Z*). Following Moravcsik (1978) we shall refer to them as *agreement features*, whether or not they are to be handled by feature notation.

If we are to give an adequate theoretical description of agreement in Slavonic, the theory will have to enable us to include the following, in a principled way:

- a. The attributive adjective normally agrees with its head noun in number, case and gender.
- b. The predicate normally agrees with the subject in some combination of number, case, person and gender.
- c. The relative and personal pronouns normally agree with their antecedent in number and gender.

Difficulties arise as soon as we try to make this account more precise and to leave out the occurrences of *normally*. These difficulties will be dealt with under *controller problems* (sec. 2), *target problems* (sec. 3), and *feature problems* (sec. 4), but it is important to note that several of the difficulties cut across this classification. An important set

of problems involves agreement choices—situations in which alternative agreement features can be assigned. We shall note these in the appropriate section, and then consider the general questions of choices separately (sec. 5). Thus Sections 2–4 are concerned with the possibilities which occur, including the existence of options, while Section 5 concentrates on constructions which permit alternative agreement forms and on the factors which influence the choice.

## 2 Controller Problems

We need to be able to specify what is the controller (sec. 2.1) and what agreement features it carries (sec. 2.2). Hence there are two potential sources of difficulty. A third set of problems arises from the effect of other rules, which make the status of the controller less clear (sec. 2.3).

### 2.1 Identifying the Controller

Most problems of identifying the controller are structural, relating to particular constructions rather than lexical items. These are of two main types: first, those where it is clear which constituent is the *overall* controller, but where it is not clear which is the element within it whose features match those of the target; and second, instances where different constituents are potential controllers.

#### 2.1.1 Competition within the Controller

There are three types of phrase in Slavonic which may function as the overall controller, yet present problems as to which element within them is the controller. They occur in various domains, of which we shall consider subject-predicate agreement. The first type is familiar; it consists of conjoined noun phrases. Consider the following Russian examples:

- (1) 

prepodavalis'	matematika	i	fizika
taught.PL.REFL	mathematics.FEM.SG	and	physics.FEM.SG

'Mathematics and Physics were taught.'
- (2) 

prepodavalas'	matematika	i	
taught.FEM.SG.REFL	mathematics.FEM.SG	and	
			fizika
			physics.FEM.SG

'Mathematics and Physics were taught.'

(Graudina et al. 1976, 31)

In (1) the predicate verb is plural, showing agreement with the conjoined noun phrases as a whole. Since neither of the conjoined noun phrases is plural, some sort of feature computation is required. Such feature

computations, or *resolution rules*, pose problems for certain theories. Example (2), on the other hand, shows predicate agreement with just one of the conjoined noun phrases. Since both are of the same gender, we cannot tell which controls the agreement. We must therefore look at an example with NPs of different gender:

- (3) byla v nej i skromnost', i  
 was.FEM.SG in her and modesty.FEM.SG and  
 izjaščestvo, i dostoinstvo  
 elegance.NEUT.SG and dignity.NEUT.SG  
 'She was modest, elegant and dignified.'

(*Pravda*, quoted by Graudina et al. 1976, 31)

In this example it is clear that agreement is with *skromnost'* as this noun is feminine singular. Agreement with one of the other nouns would be ungrammatical. *Skromnost'* is both the first NP in the series and the nearest to the verb; it is the latter characteristic which is the more important, as is shown by comparison with examples with the subject before the predicate. It should be said that Slavonic languages are classified as SVO, but that VS order, as in the examples so far, is very common; word order depends, to a significant extent, on information structure. In examples with the subject preceding the predicate, the normal possibilities are again agreement with all the NPs or with just the nearest.<sup>1</sup> This appears to be the case throughout the Slavonic family.

There is, however, a further possibility, which is uncommon. It is *distant agreement*, that is to say agreement with the first conjunct, which, with subject-verb word order, is not the nearest. Examples occur in Slovenian, a South Slavonic language:

- (4) knjige in peresa so se  
 book.FEM.PL and pen.NEUT.PL are selves  
 podražile  
 got dear.FEM.PL  
 'Books and pens have become more expensive.'

(Quoted from Lenček 1972, 59.)

Similar examples occur in Slovenian's closest relative, Serbo-Croat; the most extensive source is Megaard (1976). (It has also been claimed that

<sup>1</sup> See Corbett (1983a, 98-99) for examples. This work is referred to several times since it is in English and gives details of other sources of data. Data which are set out fully in that work are dealt with only briefly here, and certain claims made in this paper are more adequately justified there. While a proportion of the material covered has been discussed before, this paper focusses on those data which are most problematic for linguistic theory.

agreement in Čakavian dialects of the 16th-17th centuries could be with the most important conjunct, even if this were not the nearest or the first, Glavan 1927-28, 143-5; the evidence is very limited.)

The data from agreement with conjoined noun phrases require a theory to incorporate the following: resolution rules or their equivalent (to which we shall return) to cover the cases where agreement is with all the conjuncts; the ability to identify the conjunct nearest the predicate, when agreement is with one conjunct only. This information must be obtainable from that level of representation where word order dependent on information structure has been determined. For some languages there is the additional requirement that it must be possible to identify the first conjunct.<sup>2</sup>

In a related construction, the place of the conjoined noun phrases is taken by NPs linked with the preposition *s(o)* or its equivalent; in this construction the NPs refer to animates. In the East Slavonic languages we again find both singular and plural agreement, as in this Russian example (Nichols et al. 1980, 375):

- (5) Fon Manštejna čut' bylo ne otpravil/otpravili  
 Von Mannstein.ACC little was not sent.MASC.SG/PL  
 na tot svet Avdeev so  
 to that world Avdeev.NOM.MASC.SG with  
 svoim vedomym  
 his own.INST co-pilot.INST  
 'Avdeev and his co-pilot almost sent Von Mannstein to the other world.'

The point of interest is that while in previous examples all the conjuncts were in the nominative case, in this construction the structure is NP(nominative) + preposition + NP(instrumental). If agreement is singular, then it is with the NP standing in the nominative; this is entirely as expected since in Slavonic subjects must stand in the nominative to control subject-verb agreement. When plural agreement is found in examples like (5), this indicates that the oblique conjunct is in some sense "taken into account".<sup>3</sup> Thus the agreement rules must be able to

<sup>2</sup> In certain frameworks it may matter whether one claims, in examples like (2)-(4), that agreement is with just one NP, or with all the NPs though taking the features of just one. This latter claim would be possible if there were a higher NP node which could take features from just one of the dominated NPs.

<sup>3</sup> Note that when the NP in the nominative is a pronoun, then this alone controls the agreement.

identify the comitative phrase as a whole as being nominative, and then include the oblique NP in the feature computations.

Similar situations arise with quantified expressions. These are particularly varied and complex in Slavonic; only the most salient difficulties will be described here. Though it is impossible to talk of a typical Slavonic numeral, we will start with the Russian numeral *pjat'* 'five' as a representative quantifier. When itself in the nominative case, it requires quantified nouns to stand in the genitive. A subject consisting of such a quantified expression may take either neuter singular or plural agreement:

(6) vošlo pjat' devušek  
entered.NEUT.SG five.NOM girl.GEN.PL  
'Five girls came in.'

(7) vošli pjat' devušek  
entered.PL five.NOM girl.GEN.PL  
'Five girls came in.'

Both (6) and (7) are fully acceptable. The question arises as to what exactly is the controller. One analysis of (6) is that it shows the failure of the subject to provide the required features: *pjat'* is not marked for number and gender and so the verb stands in the *default form* (sec. 2.2). Sentence (7) is more difficult. It appears that, as in the comitative construction just discussed, the fact that part of the subject is in the nominative is sufficient to allow access to the features of an NP in an oblique case. Thus the plural feature comes from the noun (see Corbett 1983a, 216-20 for justification). This position is strengthened by reference to Serbo-Croat which, unlike Russian, preserves gender distinctions in the plural:

(8) pet devojaka su došle  
five girl.GEN.PL are.PL come.FEM.PL  
'Five girls have come.'

Though the singular is more likely in Serbo-Croat, when the plural occurs it shows agreement in gender with the noun, as in (8). West Slavonic languages go further, in that adjectival predicates agree with the noun in case, as the following Polish example demonstrates:

(9) pięć piór jest nowych  
five.NOM pen.GEN.PL is.SG new.GEN.PL  
'Five pens are new.'

Here *nowych* obviously agrees fully with the noun; it is not so clear what controls the agreement of the verb; one interpretation would be that it is

the default form, as in (6), which results as the verb cannot reflect both genitive and plural. The main point is that the overall controller can be identified but that isolating the element which controls agreement is not so straightforward. It is evident that the relations are different in the three languages with this one numeral. On top of that, there are profound differences in the agreement and other syntactic behavior of numerals within individual languages. As an example, consider the Russian numeral *tysjača* 'thousand'. Like *pjat'*, it can take neuter singular or plural predicate agreement; in addition it can take feminine singular agreement:

(10) ljubaja tysjača načal'nikov dannogo  
any.NOM.FEM.SG thousand.NOM chief.GEN.PL given.GEN  
ranga ravnocenna ljuboj drugoj  
rank.GEN equivalent.FEM.SG any.DAT other.DAT  
togo že ranga  
that.GEN same rank.GEN  
'Any thousand chiefs of a given rank is equivalent to any other thousand of the same rank.' (Zinov'ev)

In this example *tysjača*, which is in many respects like a feminine singular noun, controls the agreement.

Even between controllers which allow only plural or neuter singular agreement, there is great variation in the relative frequency of these options, as Table 1 illustrates.

quantifier	eighteenth century			nineteenth century			twentieth century		
	sg	pl	%pl	sg	pl	%pl	sg	pl	%pl
2-4	55	357	87	54	357	87	146	710	83
5-10	19	34	64	74	82	53	110	110	50
collectives (e.g., <i>dvoe</i> 'two')	25	41	62	23	82	78	35	255	88
complex numbers (e.g., <i>dvadcat'</i> '20')	48	26	35	71	62	47	103	65	39
compound numbers (e.g., <i>sorok pjat'</i> '45')	45	24	35	72	71	50	57	40	41
<i>neskol'ko</i> 'a few'	105	28	21	151	139	48	137	78	36
<i>mnogo</i> 'many', <i>skol'ko</i> 'how many', <i>stol'ko</i> 'so many'	42	0	0	not given			282	9	3

Table 1. Predicate agreement with quantified subjects in Russian: 18th-20th centuries

It can be seen from these data (derived from Suprun 1969, 185, 188) that plural predicate agreement is more likely with the numerals '2-4' than with '5-10' (there is, in fact, a difference between '2', '3' and '4'). *Neskol'ko* 'a few' is less likely than any of these to take plural agreement, while the plural with quantifiers like *mnogo* 'many' is quite unusual. It appears that a theory must allow a great deal of idiosyncratic information about the different quantifiers to be stored. However, it has been shown<sup>4</sup> that there is a correlation between the degree to which the syntactic behavior of a quantifier approximates to that of a noun and the likelihood of singular agreement (the more noun-like the numeral, the more likely is singular agreement). Furthermore, the higher the arithmetic value of simple cardinal numerals, the more noun-like they become. These correlations hold both within the Slavonic family and beyond. On the one hand, they indicate the presence of clear patterns in an apparently very confused area; on the other hand, it is not clear where in a grammar information of this type should be incorporated. This necessarily brief discussion of quantified expressions has shown that there are instances where there is genuine doubt as to which element in the subject NP controls agreement. Furthermore, there is great variation between controllers, which must be reflected in a grammar in some way.

### 2.1.2 Constituents Competing to be Controller

An interesting instance of competition between potential controllers arises in sentences of the form NP + copula + NP. Various grammarians state that, besides the expected agreement with the subject, agreement of the copula with the NP in the predicate also occurs. This phenomenon is sometimes called *attraction*, or *back* or *backward agreement*. Many of the examples quoted are not convincing; given the frequency of predicate-subject order in Slavonic, it is not sufficient merely to find examples of agreement with the second NP.

It may seem surprising that the problem has not been resolved. Part of the difficulty is that the proportion of sentences of the form NP + copula + NP in which the controller is clear is relatively small; in such sentences the subject and predicate NPs are almost always of the same number so that one must look for a clash in gender; in the East Slavonic languages the present tense of the verb 'to be' has the null form; and in several languages the predicate NP often stands in the instrumental case.<sup>5</sup>

<sup>4</sup> Corbett (1983a, 215-240); this source also gives information on the extensive literature on agreement with quantified expressions in Slavonic.

<sup>5</sup> For discussion of some of the Russian evidence see Revzin (1973, 129-136), Crockett (1976, 406-418, 425-428) and Nichols (1981, 48-54). Progress depends on being able to identify subject and predicate without, of course, using agreement as a test. The approach of Padučeva and Uspenskij (1979),

The following Czech sentences, however, do argue for the attraction analysis:<sup>6</sup>

(11) jedna a dvě jsou tři  
one and two are.PL three  
'One and two are three.'

(12) jedna a tři jsou čtyři  
one and three are.PL four  
'One and three are four.'

(13) dvě a tři je pět  
two and three is.SG five  
'Two and three are five.'

(14) tři a tři je šest  
three and three is.SG six  
'Three and three are six.'

The regularity is that as long as the numeral to the right of the copula is 'two', 'three', or 'four', then the copula takes plural agreement, while if it is 'five' or above, then the singular is found. The numeral on the right would certainly appear to be part of the predicate, which would mean that we have an instance of agreement with the predicate. Two syntactic tests tend to confirm this. The predicate NP normally stands in the nominative in Czech, as in (15):

(15) Ivan je genius  
Ivan is genius.NOM  
'Ivan is a genius.'

However, with a different copula, the instrumental can occur:

(16) Ivan se stane geniem  
Ivan REFL become genius.INST  
'Ivan will become a genius.'

based on the denotative status of the NPs, appears promising; it seems to justify the analysis of at least some of the commonly quoted examples as showing agreement with the predicate NP. For Serbo-Croat data see Megaard (1976, 144-150).

<sup>6</sup> This construction is noted in Vanek (1970, 53). The sentences quoted in the text are based on the intuitions of Dr. Robert Slonek, confirmed by Mrs. Magda Newman and Professor Otto Pick. I am very grateful to them all.

We can, given a suitable context, apply this test to our numerals: In (17) *pěti* 'five' is clearly the predicate, as the instrumental case shows; furthermore, since it is in the instrumental it can no longer control agreement, and the expected plural is found.

- (17) v nové matematice, dvě a dvě se stanou  
 in new mathematics two and two REFL become.PL  
 pěti  
 five.INST  
 'In the new mathematics, two and two will become five.'

The second test is analogous to subject raising. Compare (18) with (15) above:

- (18) pokládám Ivana za genia  
 consider.1.SG Ivan.ACC for genius.ACC  
 'I consider Ivan a genius.'

The NP that would be the subject of the simple sentence is marked by the accusative, the predicate by the preposition *za* plus accusative. Sentence (19) shows the application of this test to the numeral examples (again the context of a sceptical speaker is required):

- (19) v nové matematice, pokládají jednu a dvě za šest  
 in new mathematics consider.3.PL one and two for six  
 'In the new mathematics, they consider one and two to be six.'

This test too suggests that in our original examples we have NP(subject) + copula + NP(predicate) and that it is the predicative NP which controls the agreement of the copula.

Much more needs to be done to specify exactly the conditions under which this type of agreement can occur in different Slavonic languages and the factors which favor it as opposed to the normal agreement with the subject. However, given its existence, linguistic theory must take it into account. Certainly in some theoretical frameworks it is difficult to accommodate the possibility of the subject being as it were overruled in determining the agreement features of the predicate.<sup>7</sup>

<sup>7</sup> Another example of competition between potential controllers is between the subject of a matrix verb and the postulated subject of an infinitive in determining the agreement of second predicates. This problem was raised by Comrie (1974, 136) and has since been discussed by Neidle (1982, 416) and Greenberg (1983).

## 2.2 Establishing the Controller's Features

There are numerous instances in which there is no problem in identifying the controller but where there are difficulties in establishing what features it carries. Many of these, but certainly not all, relate to particular lexical items. We will begin with controllers which appear to have insufficient features and progress to those with superfluous features.

Certain controllers do not carry the features found on ordinary NPs. The most clear-cut examples are infinitive phrases, clauses and missing subjects (Slavonic does not employ dummy subjects). Targets typically take third singular neuter agreements when agreeing with such controllers, as in the following Russian examples:

- (20) kurit' vospreščaetsja  
 to smoke forbid.3.SG.REFL  
 'It is forbidden to smoke.'
- (21) jasno, čto on pridet  
 clear.NEUT.SG that he will come  
 'It is clear that he will come.'
- (22) svetało  
 dawned.NEUT.SG  
 'Day was dawning.'

The data demonstrate the need for a mechanism to assign default agreements when the controller does not carry the required features. It is important to note, however, that it is insufficient merely to assign the default features to the controllers in question, for both syntactic and morphological reasons. The syntactic reason is that if infinitives or clauses are conjoined in Slavonic they cannot take plural agreement, which would be the case if they were marked as neuter singular. The morphological reason concerns the target. While for verbs in Russian the form found for neutral agreement is identical to the neuter singular, this is not so for adjectives. In ordinary predicates two forms may occur—the long form and the short form. The factors which determine the choice are complex and need not detain us. However, given a controller which is not specified for gender and number, only the short form can be used. This is the form in (21) above; the long form *\*jasnoe* is ungrammatical.

Agreement of the type under discussion has been termed *neutral agreement*. While the agreement marker on the target is often the same as that found for a more usual set of features, this is not always the case. In Ukrainian, predicative adjectives have a special form used for neutral agreement: In (23) there is no subject, while in (24) it is an infinitive phrase.

- (23) sobakam dušno  
dogs.DAT stifling  
'It is stifling for the dogs.'
- (24) v odnij simji nam žyti i lekho i prekrasno  
in one family us.DAT to live and easy and wonderful  
'It is both easy and wonderful for us to live in one family.'

The form in *-o*, which we find in these cases, cannot be used with a neuter noun as subject; the neuter agreement form is in *-e*, for example, *prekrasne* 'wonderful'.<sup>8</sup> Theory must therefore allow for neutral agreement, both in cases where a default agreement form is used and in languages where a special form is required. One interpretation of these data is that the absence of a feature must be distinguished from its negative value. Thus neuter would be [-masculine, -feminine], while neutral agreement would result from the lack of a gender feature.

A stage on from controllers with no features we find those with insufficient agreement features. Russian *kto* 'who' is marked as animate, and cannot take neuter agreement. It normally takes masculine singular agreements by default, both when used as an interrogative, and when used as a relative:

- (25) kto prišel?  
who came.MASC.SG  
'Who came?'
- (26) te, kto prišel  
that.PL who came.MASC.SG  
'those who came'

However, given a plural antecedent, as in (26), plural agreement is also possible:

- (27) te, kto prišli  
that.PL who came.PL  
'those who came'

There must therefore be provision for a target, in this case the verb *prišli* in the subordinate clause, to agree with a controller which is partially specified and which can itself gain features from elsewhere.

The next set of controllers is those with exactly the required set of features, which cause no special problems. We move on to those which have superfluous or contradictory features. Consider, for instance, the

<sup>8</sup> For a more detailed account see Corbett (1980).

honorific pronoun (*vi* or *vy* in most of the Slavonic languages). On the one hand, it is a plural pronoun, on the other, it takes a singular referent. The result is that it can take singular and plural agreement (the conditions vary from language to language). It is important to note that both agreement forms can occur in the same sentence, as in the following Slovak example:

- (28) Mama, vy ste taká dobrá!  
Mother you are.2.PL so.FEM.SG kind.FEM.SG  
'Mother, you are so kind!'

Another common problem in Slavonic concerns names of professions. Some of these appear to be masculine but, when referring to a woman, may take both masculine and feminine agreements. The Russian word *vrač* 'doctor' is a well-studied example:

- (29) novyj vrač skazala ...  
new.MASC.SG doctor said.FEM.SG  
'the new doctor said ...'

The agreement form chosen depends to a large extent on the target, the feminine being more likely to occur in the predicate than with an attributive modifier (cf., sec. 5.2.1).<sup>9</sup>

A somewhat different problem arises in Serbo-Croat. Nouns like *gazda* 'master' have the appearance of feminine nouns but denote males. In the singular, masculine agreement is normal; in the plural, both masculine and feminine forms occur:

- (30) naši / naše gazde  
our.MASC.PL/FEM.PL masters  
'our masters'

It is also possible for controllers of this type to occur with both types of agreement in the same sentence.<sup>10</sup>

The problem under discussion is similar to the familiar problem of agreement with nouns like *committee* in English (though the restrictions

<sup>9</sup> *Vrač* and similar nouns may take a feminine attributive modifier, instead of the masculine as in (29), but only when standing in the nominative case. In the oblique cases, the masculine is normal (but see Švedova 1980, 57).

<sup>10</sup> These nouns must be distinguished from those like Serbo-Croat *oko* 'eye', which is neuter in the singular, but has the plural *oči*, which is feminine. *Oko* and similar controllers present no choice of agreement. On the other hand, Serbo-Croat *deca* 'children' shows complexities well beyond that of *gazda* (see Corbett 1983a, 76-93).

according to gender or number are an added complication in Slavonic). In Slavonic languages it is less usual than in English to find a singular noun, with no dependent plural noun, taking plural agreement. Examples do occur, however, like the following one recorded in Russian speech by Lapteva (1976, 69):

- (31) vot zdes' stojat očered'  
 here here stand.PL queue.SG  
 'Look, there's a queue here.'

Like the English examples, controllers of this type are nouns referring to groups of people. However, there are two more sets of examples which cannot be defined so easily. In Slovenian, and various other Slavonic languages, any noun referring to a person could take plural agreement, to indicate respect:

- (32) oče so šli  
 father.SG are.PL gone.PL  
 'Father went.'

This construction has largely died out.<sup>11</sup> The other construction is found in the Talitsk dialect of Russian (Bogdanov 1968). In this dialect, a plural verb can be used with a singular noun, to indicate that the noun refers to a person or persons besides the one indicated directly:

- (33) M'it'ixa dral'is'  
 Mitixa fought.PL.REFL  
 'Mitixa had a fight.'

This refers to a fight between husband and wife. Once again, conflicting agreements can be found in the same sentence:

- (34) moj brat tam toža žyl'i  
 my.SG brother.SG there also lived.PL  
 'My brother and his family also lived there.'

We require therefore that a theory must be able to cope not only with agreement with straightforward NPs, but also with those which have no agreement features, insufficient features or a superfluity of features. The last case can give rise to conflicting agreements within a single sentence. Some of these problems can be associated with particular constructions (e.g., infinitive phrases) or particular types of lexical item (e.g., nouns of profession); however, the last two cases discussed can be restricted no further than to nouns referring to humans.

<sup>11</sup> See Corbett (1983a, 41) for sources.

### 2.3 'Reluctant' Controllers

Reluctant controllers are those which do not occur in surface structure in a form which matches that of the target. A familiar example occurs in pro-drop languages such as Serbo-Croat:

- (35) čitaš  
 read.2.SG  
 'You are reading.'

In such examples the controller *ti* 'you' is regularly omitted in surface structure.<sup>12</sup>

A much more complex problem occurs in Upper Sorbian, which is a West Slavonic language spoken in Lusatia in East Germany (GDR). Consider the following phrase in Upper Sorbian:<sup>13</sup>

- (36) mojeho bratrowe džěći  
 my.GEN.MASC.SG brother.POSS.NOM.PL child.NOM.PL  
 'my brother's children'

The possessive adjective *bratrowe* agrees normally with *džěći*. *Mojeho*, however, seems to have no controller. A possible source for its agreement features can be found in the synonymous phrase:

- (37) džěći mojeho bratra  
 child.NOM.PL my.GEN.MASC.SG brother.GEN.MASC.SG  
 'children of my brother'

In (37) there is, of course, no difficulty about the agreement of *mojeho*. The next pair of examples show the same correspondence:

- (38) stareje žonina  
 old.GEN.FEM.SG woman.POSS.NOM.FEM.SG  
 drasta  
 dress.NOM.FEM.SG  
 'old woman's dress'
- (39) drasta stareje žony  
 dress.NOM.FEM.SG old.GEN.FEM.SG woman.GEN.FEM.SG  
 'the old woman's dress'

<sup>12</sup> For another example of a missing controller, the subject of the infinitive, see Comrie (1974), especially page 108.

<sup>13</sup> Data from Fasske (1981, 385), Michalk (1974, 510) and Šewc-Schuster (1976, 27, 100-101), discussed in Corbett (1987), where data from other Slavonic languages can also be found.

Once again it appears that the noun which is the source of the possessive adjective is somehow available for agreement purposes. Example (40) illustrates anaphoric reference:

- (40) to je našeho učerjowa  
 that is our.GEN.MASC.SG teacher.POSS.NOM.FEM.SG  
 zahrodka. Wón wjele w njej džěla  
 garden.NOM.FEM.SG He a lot in it works  
 'That is our teacher's garden. He works in it a lot.'

The antecedent of *wón* 'he' is *naš učer* 'our teacher', which underlies the phrase headed by *wučerjowa*. The main point, however, is that in Upper Sorbian adjectives can agree with a reluctant controller, apparently with a noun which is the source of a possessive adjective in surface structure. There is a further complication; example (41) is of the now familiar type:

- (41) w našeho nanowej  
 in our.GEN.MASC.SG father.POSS.LOC.FEM.SG  
 chěži  
 house.LOC.FEM.SG  
 'in our father's house'

However, we also find comparable phrases which show what in Upper Sorbian grammar is termed *attraction*:

- (42) w našej nanowej  
 in our.LOC.FEM.SG father.POSS.LOC.FEM.SG  
 chěži  
 house.LOC.FEM.SG  
 'in our father's house'

In such examples the adjective agrees with the head of the NP, rather than with the reluctant controller. This is a further instance of competing controllers, discussed in Section 2.1.2.

There is another reluctant controller to be found in Russian quantified expressions. The numerals *dva* 'two', *tri* 'three', and *četyre* 'four', when themselves in the nominative, take a noun in the genitive singular. *Dva* has the form *dve*, which occurs with feminine nouns:

- (43) dve sosný<sup>14</sup>  
 two.NOM.FEM pine.GEN.FEM.SG  
 'two pines'

The problem is that the numeral governs the form of the noun; if the noun were not singular, then there would be no agreement in gender since gender is not distinguished in the plural in Russian. This genitive singular noun then serves as the controller for agreement in gender of the numeral which governs it.

The noun also serves as a reluctant controller for attributive adjectives, which may stand in the nominative or genitive plural:

- (44) dve krasivye sosný  
 two.NOM.FEM beautiful.NOM.PL pine.GEN.FEM.SG  
 'two beautiful pines'
- (45) dve krasivyx sosný  
 two.NOM.FEM beautiful.GEN.PL pine.GEN.FEM.SG  
 'two beautiful pines'

One would expect the adjective to agree with the noun, but it clearly does not do so in surface structure. One analysis would have the noun as plural, prior to the imposition of the genitive singular by the numeral.

In general, the data discussed in this subsection appear less difficult for transformational grammar, than for its successors, though even there problems arose as to the place of agreement relative to other rules. The main difficulty to be faced is that elements occur in surface structure which appear to be agreement targets, yet whose controllers are either absent, or if present are not in a form which matches the features shown by the target.

### 3 Target Problems

We now turn to problems which center on the target, though several are closely connected to the controller problems just discussed. Target problems are of two main types: those arising from the existence of compound targets and those caused by 'reluctant' targets.

#### 3.1 Compound Targets

Compound targets are usually predicates, as in this Serbo-Croat example:

- (46) Jovan je došao  
 Jovan is.3.SG come.MASC.SG  
 'Jovan has come/came.'

<sup>14</sup> Note that *sosný* cannot be interpreted as nominative plural, since the latter is stem stressed: *sósny*.

The commonest auxiliary in Slavonic is *biti* 'to be' or its cognate form. In (46) it shows agreement in person and number with the controller, as does any other present tense verb. It does not vary for gender. The active participle *došao*, on the other hand, does not vary for person, but does agree in number and gender. In any analysis which involves the copying of features onto the target, the problem arises as to whether person, number and gender features are to be copied onto both parts of the predicate and then the redundant feature in each case discarded, or whether the unnecessary features will not be copied.<sup>15</sup> Whatever the analysis, it is clear that the agreements shown in (46) depend in large measure on properties of the target.

In (46), the two parts of the predicate agree in different features, but the feature which they share (number) shows the same value. However, compound predicates may show different values of the same feature, as in the Slovak example already discussed (cf. (28)):

- (47) Mama, vy ste taká dobrá!  
 Mother you are.2.PL so.FEM.SG kind.FEM.SG  
 'Mother, you are so kind!'

In this example with honorific *vy*, both parts of the predicate agree in number, but they show different forms.<sup>16</sup> (This would create problems for an analysis copying all features onto a higher node, say a VP node, and copying just those required onto the auxiliary and participle.)

### 3.2 Reluctant Targets

These are targets which do not occur in surface structure in a form which matches that of their controller. The phenomenon is, of course, similar to that of reluctant controllers; an example will clarify the distinction. In Russian, given the actual presence of a copula verb (i.e., not the null form of *byt'* 'to be') the predicative adjective may stand in the nominative or the instrumental:

- (48) ona byla krasivaja  
 she.NOM.FEM.SG was.FEM.SG beautiful.NOM.FEM.SG  
 'She was beautiful.'

<sup>15</sup> This is a comparable problem to that raised in Huddleston (1975).

<sup>16</sup> In this instance the clash of features is the normal case. A similar situation may arise when there is a choice of agreement forms. Though it is then usual for compound predicates to show consistent agreements, this does not always happen. For example, in agreement with conjoined noun phrases, the finite verb may be singular and the participle plural; see Corbett (1983a, 214) for examples from Czech and Old Church Slavonic.

- (49) ona byla krasivoj  
 she.NOM.FEM.SG was.FEM.SG beautiful.INST.FEM.SG  
 'She was beautiful.'

In (49) the predicative adjective agrees with the subject in gender and number but not case.<sup>17</sup> Unlike the reluctant controller examples, here the controller is exactly as expected, in the normal case for subjects in Slavonic, while the target has undergone a rule which makes it match the controller less completely.<sup>18</sup>

The second type of reluctant target is the predicate noun. It might be thought that there is no question of the predicate noun showing agreement. Yet predicate nouns are possible agreement targets (in Tatar, for example, they can show agreement in person, Poppe 1963, 122-123). As Comrie (1975) has shown, however, they are the least likely type of predicate to show agreement. Normally in Slavonic, the form of a predicate noun is not determined by agreement. Nevertheless, agreement in number does occur, though very rarely. In Russian of the last century, the less well educated used a plural predicate noun for polite address to a single addressee, as in the following example from Chekhov:

- (50) izmenniki vy, čto li?  
 traitor.PL you that INTERROG.PART  
 'Are you a traitor, then?'

Thus while the number of predicate nouns is normally determined solely by semantic considerations, there must be provision for them to be agreement targets.

The final type of problematic target is that which simply does not appear, because speakers avoid it. In Russian, adjectival predicates

<sup>17</sup> There is also the question as to whether the nominative predicate in examples like (48) shows agreement with the subject or whether the nominative results as the default if no other case is assigned. Russian provides no clear evidence on this point.

<sup>18</sup> A similar situation arises in 'subject-raising' sentences:

- (a) on sčitaet ee krasivoj  
 he considers her.ACC.FEM.SG beautiful.INST.FEM.SG  
 'He considers her beautiful.'

Here again the target *krasivoj* agrees with the controller *ee* in number and gender. If we were to accept the subject-raising analysis then we would have a reluctant controller as well as a reluctant target, since neither the subject nor the predicate of the embedded clause appears in the expected nominative case.

with quantified subjects are very rare. When faced with a sentence like (51), Russian informants are uneasy; they do not correct the example, but prefer to use a different construction.

- (51) ? pjat' mal'čikov umnye  
 five.NOM boy.GEN.PL clever.NOM.PL  
 'Five boys are clever.'

In Polish too, speakers are unhappy about certain combinations, and so avoid them (Bogusławski 1973, 31).

Thus targets require that a theory should have the ability to handle compound targets taking different features or different values of the same feature. The target may not match the controller in other features (notably case) as expected, and predicate nouns must be included as potential targets. Finally, in particular constructions some targets must be marked as unnatural though possible.

#### 4 Feature Problems

In this section we assume that target and controller can be identified and consider problems which may arise as to the agreement categories or features they share (whether or not these are analyzed in feature notation). The main problems concern resolution rules (sec. 4.1), default values (sec. 4.2) and the number of genders (sec. 4.3).

##### 4.1 Resolution Rules

The question as to whether agreement will be with one of a set of conjuncts or with all was raised in Section 2.1.1. A theory must also provide a mechanism (resolution rules) to specify what feature value will result from all possible combinations, when agreement is with more than one conjunct; if the theory can predict these values, so much the better. Since these problems have been considered at length elsewhere (Corbett 1983a 177-214), only the main points will be raised here. We will begin with Slovenian data (from Lenček 1972).

For person resolution, Slavonic has the usual rules in which the first person has priority over the second and the second over the third. Example (52) shows first and third persons conjoined:

- (52) jaz in Tonček sva prizadevna  
 I and Tonček are.1.DUAL assiduous.MASC.DUAL  
 'Tonček and I are assiduous.'

The verb stands in the first person. Example (52) also illustrates the first number resolution rule required for languages which, like Slovenian,

have the dual number: if there are two conjuncts only, both of which are in the singular, then dual agreement forms will be used. Other cases of agreement with more than one conjunct require the plural.

It is mainly in gender resolution that the problems occur. Slovenian has three genders, masculine, feminine and neuter; the gender resolution rules, somewhat surprisingly are as follows:

1. If all conjuncts are feminine, then the feminine form is used;
2. otherwise the masculine form is used.

The operation of the first rule can be seen in (53):

- (53) Marina, Marta in Marjanca so  
 Marina.FEM Marta.FEM and Marjanca.FEM are.PL  
 prizadevne  
 assiduous.FEM.PL  
 'Marina, Marta and Marjanca are assiduous.'

Any other type of combination produces masculine agreement, even when there is no masculine conjunct present:

- (54) ta streha, okno in gnezdo pod  
 that.FEM roof.FEM window.NEUT and nest.NEUT under  
 njim mi bodo ostali v spominu  
 it me.DAT will.PL remain.MASC.PL in memory  
 'That roof, window and the nest under it will remain in my memory.'
- (55) to okno, drevo in gnezdo  
 that.NEUT window.NEUT tree.NEUT and nest.NEUT  
 pod njim mi bodo ostali  
 under it me.DAT will.PL remain.MASC.PL  
 v spominu  
 in memory  
 'That window, tree and the nest under it will remain in my memory.'

Slovenian is relatively straightforward, in that the resolution rules need refer only to the syntactic gender of nouns. Cases occur, however, where the resolution rules require access to morphological or semantic information. Serbo-Croat has a similar gender system to that of Slovenian and the same resolution rules operate. In addition there must be provision for examples like (56). In this example we find masculine agreement

even though both conjuncts are feminine (Serbo-Croat has lost the dual number).

- (56) Vredali su ga nebriga i  
 offended.MASC.PL are.PL him carelessness.FEM and  
 lakomislenost Tahir-begova (Andrić)  
 capriciousness.FEM Tahir-beg.POSS.FEM  
 'The carelessness and capriciousness of Tahir-beg offended him.'

Feminine nouns in Serbo-Croat belong to two main declensional classes: the majority are like *nebriga*, ending in *-a* in the nominative singular; there is also a sizable minority like *lakomislenost*, with no ending in the nominative singular. Provided that one of the conjuncts belongs to this second morphological class, then masculine agreement is possible.<sup>19</sup>

To find an example where semantic considerations apply we turn to Polish, which has a rather different gender system. The important examples are those like (57):

- (57) Hania i Reks bawili się  
 Hania.FEM and Rex.MASC amused.PERS.MASC.PL REFL  
 piłką  
 ball.INST  
 'Hania and Rex played with a ball.'

Normally for masculine personal agreement forms to result, at least one of the conjuncts must be masculine personal (the rules are quite different from those of the South Slavonic languages). In (57) *Reks* is a dog, masculine but not personal. The use of the masculine personal in (57), which is the more common choice though the non-masculine personal form also occurs, results from the combination of *Hania* being semantically human (personal) and *Reks* being syntactically masculine.

Thus Slavonic data require resolution rules to specify the values resulting from various feature combinations and there is evidence to suggest that these rules may require access not only to syntactic gender but also to morphological or semantic information.

#### 4.2 Default Values

As has already been discussed in Section 2.2, there must be provision for assigning default values to features, particularly in the case of controllers which have no agreement features. Similarly, some controllers have insufficient features, and we noted the case of *kto*, a controller marked as

<sup>19</sup> See Corbett (1983b, 201–205) for more details.

animate, which took masculine agreement by default. While masculine is the normal default for animates in Slavonic, there is a special usage in Polish, which deserves attention:

- (58) któreś z małżonków jest  
 one.NEUT.SG of spouse.GEN.PERS.MASC.PL is.SG  
 winne zarzucanej mu zbrodni  
 guilty.NEUT.SG imputed.GEN it.DAT crime.GEN  
 'One of the spouses is guilty of the crime he or she has been accused of.'

*Małżonkowie* is masculine personal and means 'husband and wife'. When either the husband or the wife is potentially the referent, then Polish uses the *evasive neuter* (see Gotteri 1984 for the term and data). Thus even default choices can be language-specific.

#### 4.3 The Number of Genders

It is not always self-evident how many genders a language has. The first complication involves sub-genders. Continuing with Polish, we may say that there are at least three genders in the singular, as agreement with nominative case forms shows:

- |      |             |               |              |
|------|-------------|---------------|--------------|
| (59) | masculine   | feminine      | neuter       |
|      | duż-y stół  | duż-a książka | duż-e okno   |
|      | large table | large book    | large window |

Within the masculine gender, different agreement forms are found with certain nouns:

- |      |            |               |               |
|------|------------|---------------|---------------|
| (60) |            | inanimate     | animate       |
|      | nominative | duż-y stół    | duż-y koń     |
|      | accusative | duż-y stół    | duż-ego konia |
|      | genitive   | duż-ego stołu | duż-ego konia |
|      |            | large table   | large horse   |

In the accusative, *stół* takes agreement forms as for the nominative while *koń* takes forms equivalent to those of the genitive.<sup>20</sup>

Most nouns in the latter class refer to humans or animals and so the class is called 'animate', but there are many nouns which are treated as animate but refer to inanimates. If we restrict our attention to the

<sup>20</sup> This is not a simple case of syncretism since it extends beyond single paradigms; one solution is to adopt feature-change rules (Corbett 1981, 69–70).

singular, we find that animacy is relevant only in the accusative case. The question then arises as to whether all adjectives must agree with their head noun in the feature of animacy, even though it is relevant only for masculines and only in the accusative case.

When we turn to the nominative plural we find that targets can show only two agreement markers:

(61) masculine personal	non-masculine personal
duz-i mnisi	duż-e stoly konie książki okna
large monks	large tables horses books windows

The distinction is between nouns referring to male humans (masculine personal) and the rest. This situation has led some linguists to treat gender in the singular as distinct from gender in the plural. In fact, the question of the number of genders in Polish has been the subject of considerable debate; at least the following numbers have been proposed: three, five, six, seven and nine. The number decided on depends largely on one's theory of agreement; one can count either the number of different controllers to be accounted for or the number of different forms for targets. The point, then, is that agreement categories may not be straightforward; their configuration may depend on the theory adopted.

## 5 Agreement Choices

We have noted several constructions in which alternative agreement forms occur. We must now consider the significance of these constructions and the factors which constrain the choice.

### 5.1 The Significance of Agreement Choices

The first point to note about agreement choices is that they exist and are quite common. Yet they have received relatively little attention from theorists. Of the examples discussed above, conjoined noun phrases and quantified expressions frequently involve agreement choices in languages outside the Slavonic group. Furthermore, agreement choices are common in the sense that they occur frequently in language use. Some idea of their frequency can be gained from the following figures. A corpus of about 49,000 words of spoken Russian (Zemskaja and Kapandze 1978) was scanned for examples of the two choices just mentioned plus the choice of agreement with relative *kto* described in Section 2.2. There were 22 examples, in other words examples occurred more frequently than once in 2,500 words. In addition, there were other agreement choices which were not included in the count.

It should also be stressed that the familiar dichotomy of syntactic and semantic agreement is insufficient, since in some constructions in Slavonic we find three agreement options. The case of *tysjača* has already been mentioned (sec. 2.1.1). Another example is Russian *rjad*

'series, number': the following three examples<sup>21</sup> show that instead of talking about syntactic and semantic agreement, we should rather talk of one form having greater semantic justification than another.

(62)	rjad	čelovek	sidel
	number.MASC.SG	person.GEN.PL	sat.MASC.SG

(63)	rjad	čelovek	sidelo
	number.MASC.SG	person.GEN.PL	sat.NEUT.SG

(64)	rjad	čelovek	sideli
	number.MASC.SG	person.GEN.PL	sat.PL

'A number of people was/were sitting.'

Using significance in a different sense, it is worth asking whether agreement choices have semantic significance. Informants sometimes claim that there is a semantic difference between certain agreement options. In some cases it appears that they are imposing a logical interpretation on surprising and troublesome facts about their own language; they feel there ought to be a difference in meaning and so they find one. There is a need for very skilled informant work to establish whether some or all agreement choices are semantically significant.

### 5.2 Factors Determining the Distribution of Agreement Options

Whether or not they are semantically significant, it is certainly true to say that the distribution of agreement options is heavily constrained. The major constraints are the linguistics ones, though sociolinguistic factors, in the broadest sense, also have a role. These factors have been analyzed in detail elsewhere (Corbett 1983a), and so will be outlined very briefly here.

#### 5.2.1 Linguistic Factors

The first obvious factor that determines choices of agreement is the controller: it must be one of those which permits a choice. A grammar must be able to include detailed information about individual controllers since, as Table 1 above shows clearly, they differ dramatically in the frequency with which they take different agreement forms. There are more general factors which relate to controllers of various different types. Controllers which refer to animates are more likely to take agreement forms with a greater degree of semantic justification than are inanimates. Similarly, controllers which precede their targets are more likely to take agreement forms with a greater degree of semantic justification than

<sup>21</sup> For further examples see Corbett (1983a, 76-83).



### 5.2.2 Sociolinguistic Factors

Besides the various linguistic factors so far described, the choice between agreement options is influenced by a range of sociolinguistic factors. There is evidence to show that all of the following operate in Slavonic: the educational level of the speaker, occupation, region within the area of a standard language (there is also considerable variation between standard language and dialects) and the sex and age of the speaker (Corbett 1983a, 30–39). The fact that differences can be correlated with age suggests, of course, that agreement is subject to diachronic change. There is evidence for this in Table 1. It should be noted, however, that diachronic change does not always involve change in favor of forms with greater semantic justification; Table 1 illustrates change in both directions.

The fact that there are so many sociolinguistic variables, which interact with the target and controller factors described above, makes it very difficult to pin down the effect of one particular factor. Such analysis will require either extensive and careful informant work or the scanning of large corpora (or preferably both).

## 6 Conclusion

Agreement is an apparently simple phenomenon, the evidence for which is easily available on the surface. Yet this attempt to set out a basic specification of agreement in Slavonic has revealed numerous complications, all within a single language group, which have been spelled out at various points. A recurring theme is the interaction of the target, the controller and the agreement features. While data of this type are of potential interest to any theorist, agreement data would appear to be of particular relevance to those concerned with features and to those trying to provide a more satisfactory account of performance data within linguistic models. The problems outlined in the paper may seem daunting; that is not the effect intended. Rather it is hoped that data provided here will be of use in attempts to bring linguistic theory closer to an adequate account of agreement.

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